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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,233	07/31/2001	Donna D. Latham	11920-1380	5554

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EXAMINER

RUDDOCK, ULA CORINNA

ART UNIT	PAPER NUMBER
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1771

14

DATE MAILED: 06/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/919,233

Applicant(s)

LATHAM ET AL.

Examiner

Ula C Ruddock

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 5/27/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-6, 10-19 and 23-49 is/are pending in the application.
- 4a) Of the above claim(s) 27-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 15-19 and 23-25 is/are allowed.
- 6) ☐ Claim(s) 1-6, 10-14, 26 and 49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 27, 2003, has been entered.

Claim Objections

2. Claim 2 is objected to because of the following informalities: the claim is missing the percentage symbol (%). Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4-6, 10-14, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forsten et al. (US 5,578,368) in view of Lin et al. (US 5,691,036). Forsten et al. disclose a fire-resistant material comprising a fiberfill batt and at least one fire-resistant layer of aramid fibers. The aramid fiber layer may be needle-punched, hydroentangled, or laminated to the fiberfill batt (abstract). The aramid fiber layer may comprise a nonwoven fabric (col 2, ln 63-64). Forsten et al. fail to disclose that the fiberfill batt comprises aramid fibers and the aramid fiber layer is a nonwoven scrim.

Lin et al. disclose a high temperature cushioning material (abstract). The material comprises a nonwoven scrim made up of p-aramid or m-aramid fibers (col 3, ln 1-5). The scrim is made from strong, heat resistant fibers (col 2, ln 65-67). The scrim has a weight of 30-120 g/m², i.e. .884-3.539 oz/yd² (claim 1). The material also comprises aramid batts (col 2, ln 26-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used Lin's nonwoven aramid scrim in place of Forsten's nonwoven fabric layer, motivated by the desire to create a lightweight, yet still heat-resistant fabric. Furthermore, it would have been obvious to one having ordinary skill in the art to have used Lin's aramid batt in place of Forsten's fiberfill batt, motivated by the desire to create a fabric with increased heat resistance.

With regard to claims 10, 11, 12, and 14, Forsten et al. and Lin et al. disclose the claimed invention except for the teaching that the scrim comprises approximately 11-60% of the fabric by weight, that the scrim has a thickness of approximately 0.001 to approximately 0.07 inches, that the flame resistant fibers have a thickness of approximately 0.031 to approximately 0.128 inches, and that the fabric has a tensile strength of greater than approximately 25 pounds in the machine direction and greater than approximately 30 pounds in the cross-machine direction. It should be noted that increasing the amount of scrim in the fabric composite, increasing the scrim thickness, increasing the thickness of the flame resistant fibers, and optimizing the tensile strength of the fabric in both the machine direction and cross-machine direction are all result effective variables. For example, the amount of scrim in a fabric composite directly affects the strength of the fabric composite. In addition, increasing the thickness of the flame resistant fibers directly affects the flame resistance of the composite. Therefore, it would have been obvious to one having ordinary

skill in the art at the time the invention was made to have made the scrim comprise approximately 11-60% of the fabric by weight, to have made the scrim have a thickness of approximately 0.001 to approximately 0.07 inches, to have made the flame resistant fibers have a thickness of approximately 0.031 to approximately 0.128 inches, and to have made the fabric have a tensile strength of greater than approximately 25 pounds in the machine direction and greater than approximately 30 pounds in the cross-machine direction, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have optimized the scrim amount, the scrim thickness, the thickness of the flame resistant fibers, and the tensile strength, motivated by the desire to obtain a composite having increased strength and flame resistance.

Furthermore, with regard to claim 2, Forsten et al. and Lin et al. fail to disclose an aramid mixture of 65 para-aramid fiber to 35 meta-aramid fiber. It would have been obvious to one having ordinary skill in the art to have used these specific amounts of p-aramid and m-aramid fiber, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In the present invention, one would have been motivated to use 65 para-aramid and 35 meta-aramid, motivated by the desire to create a fabric having a balance of good aesthetic properties, low shrinkage at high temperatures, increased strength, and increased flame and abrasion resistance.

With regard to claim 13, Forsten et al. and Lin et al. disclose the claimed invention except for the teaching that the fabric satisfies FAA seat burn requirements. Although Forsten et al. and Lin et al. do not explicitly teach that the fabric satisfies FAA seat burn requirements, it is reasonable to presume that satisfying FAA seat burn requirements is inherent to the fabric composite of Forsten et al. and Lin et al.. Support for said presumption is found in the use of like materials, i.e. a nonwoven aramid scrim needlepunched or hydroentangled to an aramid batt. The burden is upon Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 495. In addition, the presently claimed property would obviously have been present once the Forsten et al. and Lin et al. product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977).

5. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forsten et al. and Lin et al., as applied to claim 1 and 26 above, and further in view of Ilg et al. (US 5,560,990) and Behnke et al. (US 4,120,914). Forsten et al. and Lin et al. disclose the claimed invention except for the teaching of the scrim comprising 50% melamine fibers, and approximately 25% p-aramid fibers and 25% m-aramid fibers. Ilg et al. (US 5,560,990) disclose fiber blends of melamine resin fibers and aramid fibers (abstract) that are useful for flame and heat resistance (col 1, ln 12). The fiber blends consist essentially of 5-95 parts by weight of melamine resin fibers and 95-5 parts by weight of aramid fibers (claim 1). Behnke et al. (US 4,120,914) disclose an aromatic polyamide fiber blend for protective clothing that comprises 45-55 weight percent poly(m-phenylene isophthalamide), i.e. meta-aramids and 45-55 weight percent poly(p-phenylene terephthalamide), i.e. para-aramids (abstract). It would have been obvious to one having ordinary skill in the art to have used the melamine and aramid fiber blend of Ilg et al. in the nonwoven scrim of Forsten et al.

and Lin et al., motivated by the desire to obtain a composite with increased strength and abrasion resistance. Furthermore, it would have been obvious to have used the meta-aramid and para-aramid fiber blend taught by Behnke et al. in the nonwoven scrim of Forsten et al. and Lin et al. and Ilg et al., motivated by the desire to obtain a composite with a balance of good aesthetic properties and low shrinkage at high temperatures.

Furthermore, it should be noted that while Ilg et al. disclose fiber blends comprising 5-95 parts by weight of melamine resin fibers and 95-5 parts by weight of aramid fibers and Behnke et al. disclose 45-55 weight percent meta-aramids and 45-55 weight percent para-aramids, they fail to explicitly teach a nonwoven scrim comprising approximately 50% melamine fibers, approximately 25% para-aramid fibers, and approximately 25% meta-aramid fibers. It would have been obvious to one having ordinary skill in the art to have made the nonwoven scrim of Forsten et al. and Lin et al., Ilg et al., and Behnke et al. comprise a fiber blend of approximately 50% melamine fibers and approximately 50% aramid fibers (i.e. 25% para-aramid and 25% meta-aramid), motivated by the desire to obtain a composite with a balance of good aesthetic properties, low shrinkage at high temperatures, increased strength, and increased flame and abrasion resistance.

Allowable Subject Matter

6. Claims 15-19 and 23-25 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: no prior art was found to teach a fire blocking fabric consisting of a nonwoven scrim comprising 50% melamine fibers, 25% p-aramid fibers, 25% m-aramid fibers, and a plurality of flame resistant fibers that are entangled through only one side of the nonwoven scrim.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ula C Ruddock whose telephone number is 703-305-0066. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

UCR *UCR*
June 16, 2003

Ula Ruddock